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PROJECT COORDINATING COMMITTEE

The third meeting of the Circumferential Transit Feasibility Study Project Coordinating Committee will be held on Tuesday, August 2nd at 7:00 pm in Conference Rooms, 2 and 3 at the Transportation Building, 10 Park Plaza, Boston.

The agenda for this meeting will include; comment on the minutes of the second Project Coordinating Committee meeting and review of:

- findings to date of the right-of-way analysis.
- the TSM Alternative, including traffic improvements and express bus routes.
- new Scope Elements, including a detail TSM analysis, and year 2010 Central Subway analysis.

Review of the attached material by meeting participants will enhance the information gathered and will be important in guiding the study into its next phase.

I look forward to your attendance and participation at this meeting and in the subsequent work of the Project Coordinating Committee.

If you have any questions, please contact Ms. Esther Johnson, Project Coordinator, 722-5352. Thank you for your interest in the Project.

Sincerely,

Peter C. Calcaterra
Project Manager

Attachments: Meeting Agenda
October Meeting Minutes

684/346

AGENDA

CIRCUMFERENTIAL TRANSIT FEASIBILITY STUDY

PROJECT COORDINATING COMMITTEE MEETING

Tuesday
August 2, 1988

7:00 - 9:00 PM

CONFERENCE ROOMS #1 AND #2, SECOND FLOOR

TRANSPORTATION BUILDING

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PROJECT COORDINATING COMMITTEE

MEETING MINUTES

OCTOBER 27, 1987

MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

CIRCUMFERENTIAL TRANSIT FEASIBILITY STUDY

Project Coordinating Committee Meeting Minutes

October 27, 1987

AGENDA

1. Introduction
2. Preliminary Short Range Bus Improvements
3. Long Range Corridor Alternatives
4. Evaluation Criteria
5. Schedule & Next Steps
6. Questions

The following materials were mailed prior to the meeting and were also distributed to the attendees:

- Meeting Agenda
- Minutes from the July 2, 1987 Meeting
- Description and Maps of the Long Range Alternatives
- Description and Map of the Short-term Bus Improvements

A brief explanation of the project and of the previous Project Coordinating Committee meeting was given by the MBTA Project Manager, Peter Calcaterra.

An update on the current project activities was given by the TAMS Project Manager, Jim Parsons. Parsons presented a summary of possibilities for short term bus improvements and asked for comments.

Questions/Comments on Short Term Bus Improvements:

Charles Bahne (APT): My first concern is improving transfer conditions at points that may be identified as transfer points for rapid transit. One is Brookline Village. When you transfer from bus to bus, or from the bus to the Green

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Line, in some cases you have to cross Route 9 on foot.

Parsons: In some of these areas where the difficulty of transferring is an impediment to using transit, we will look at solving the transfer problem. Right now the objective is to identify those areas of high travel demand, where transit is not being utilized. Based upon these we will next try to determine why ridership is low and what the possible solutions could be. If the possible solution is to improve transfer conditions, then that will be addressed.

Bahne: My other concern is the scheduling of services. It seems that one way to improve service would be to have schedules coordinated. Another way would be to combine some of those lines. If you should decide that the buses are going to run very infrequently, then have everything timed so that you can know when they arrive. Or else channel them so they can run very frequently, then people won't have to worry about making the transfer.

Parsons: We realize that some of these transfer situations must be corrected.

Bahne: My last thought would be about places where the existing transit system doesn't really achieve maximum distribution. An example would be the Simplex/MIT area, where it's going to be a long walk to Central Square and Massachusetts Avenue. Maybe there are some lower cost ways for providing some sort of distribution. The Longwood Medical area is another large area. If you're dropped off on one side of the Medical area you have a long walk to the other side.

Parsons: We'll talk about that later in the meeting when we'll discuss the long range alternatives.

Don Hill (New England Medical Center): My concern is the transfer points from bus to rapid transit. It always seems that the train is pulling out of the station the moment the bus pulls into the station. I know that Philadelphia has coordination between the two modes. They have a light at the end of the platform so that the train can see if a bus has just pulled in so that they will wait an extra minute for the bus passengers. Are you looking into that?

Parsons: Vehicle monitoring systems are fairly common. We are looking at a number of systems and they look fairly promising; various transit systems have vehicle monitoring

systems that help determine where buses actually are on each route. They can also help to determine if a bunching situation is developing because of congestion; it would then allow someone in the Central Dispatching office to express certain buses or add buses into the operation. Many systems around the country that use this method also have a very good coordination between the buses and the rapid transit.

Dick Tilles (URS): What's the next step on the short term bus improvements?

Parsons: We're doing a couple of things. One is identifying the most logical way to implement these suggestions, whether they're an addition of a new route, or improving transfer or traffic conditions. Then we'll try to forecast ridership based on the 1985 travel pattern data. And then we'll be working with the MBTA operations staff to help identify how some of these changes can be implemented. For some of the other improvements, such as vehicle monitoring and signal preemption, we've already done quite a bit of work.

Calcaterra: In addition to what Jim mentioned earlier, we'll be looking at private bus carrier service and how they may fit into the short term bus improvement possibilities.

Bahne: At the next meeting what should we expect to see?

Parsons: We will be presenting the results of the evaluation work.

Bahne: Will you have specific suggested improvements?

Parsons: Yes.

Parsons then conducted a detailed discussion of the six suggested long range alternatives and asked for comments.

Ted Seigel (City of Boston Transportation Department): I'm surprised to hear that the target date for this project is 2000. That's pretty quick to plan and construct an alternative. There would be no allowance for expansion.

Parsons: The target year is 2010 for all the forecast work. That's about twenty five years away, and the furthest out that we have estimates for population and employment.

John Woodward (Brookline): Can you comment a little more specifically on whether you're talking about underground, at grade, or above ground?

Parsons: We're basically looking at all of them. In some cases, right now, the only option is going to be subway. There are certain areas where, from an environmental standpoint, you couldn't do anything but go underground, like Longwood, Fenway, and Brookline. We had hoped and still hope that there may be a way to use the Grand Junction Railroad at grade to avoid having to go to subway or with aerial structures. But that is not looking all that promising at this point.

Graham (Sverdrup): The area that looks most likely to go underground is from the Orange Line at Ruggles to Broadway, and the section from Huntington Avenue to the Grand Junction Railroad in Cambridge.

Jack Harris (Brookline): When you're talking about subways, are you talking about a tube type or an open cut construction?

Parsons: We'd be looking at both. But obviously the problem with cut and cover construction is the disruption during construction. We're evaluating both options as part of this analysis. We can't say at this point what it would be.

Denise Karuth (Governor's Commission on Accessible Transportation): How is accessibility of the various alternatives going to be evaluated? I know for example that the MBTA when considering options for Orange Line replacement service has considered the light rail vehicle option which is not currently accessible for people who are unable to climb stairs. Another concern is that at the same time the MBTA is doing a feasibility study for accessibility on the existing Green Line corridor and the Mattapan High Speed Line, they are not considering the accessibility on future projects such as this one and the Orange Line replacement service.

Calcaterra: Wheelchair accessibility is one of the evaluation criteria for this project. Option 3, which doesn't include any connections to the existing systems, can be made fully accessible. However on Option 4, wheelchair accessibility will require accessibility on the existing system. Whether or not Option 4 or the replacement service light rail alternative will be wheelchair accessible depends

on the outcome of the current feasibility study of the central system being made wheelchair accessible.

Karuth: The community is concerned about getting MBTA assurances that above ground and below ground services are wheelchair accessible.

Bahne: Most of these alternatives have very good connections with the existing radial lines. However, there are two locations that would seem to have a poor transfer with the existing lines. The first is the Red Line at Tech Square which is part way between Kendall and Central Squares. The second is the Beacon Street branch of the Green Line at Audubon Circle that is between the existing tunnel and Kenmore.

Parsons: There are problems with connections to all the Green Line branches. Physically connections are just not that easy to do. There is a real question in our minds about how we are going to deal with the connection to the "C" Line in that area. It relates primarily to whether we can utilize the existing railroad bridge to cross the Charles River. This area is extremely congested in terms of structures and activity. We've got the highway bridge, Storrow Drive, the Massachusetts Turnpike, Commonwealth Avenue, the railroad tracks plus the Green Line branches. This whole area and how we deal with it, and the other two Green Line crossings are really up in the air. That's something that we're going to have to look at very hard. The solution may be to develop new stations in this area or it may be that we won't even come through this area. With the Red Line we're basically looking at two options. First, the branches that go to Lechmere (Option 3A) would give you an interface at Kendall. It wouldn't be an ideal situation however. For the other options you may be looking at some other kind of connection, maybe the development of a new station half way between Kendall and Central Squares. There are major physical problems with some of the other rapid transit connections like Sullivan Square on the Orange Line. Those are probably the most difficult ones. And JFK/UMass on the Red Line would not be that easy to develop either.

Tom Lenthall (Cambridge): Have you thought of an interim solution of running part of the Highland Branch to Huntington Avenue and Brookline Village? The tracks are still under the pavement. Is that feasible?

Parsons: Potentially that could make sense, although we haven't looked at that. We are generally looking at circumferential travel patterns. As a circumferential route you might run one to Ruggles Station then.

Lenthall: I don't know if that would be worthwhile.

Parsons: We will get a rough idea of potential ridership from the area served by the Highland Branch by the guided bus option. While it won't be exactly the Highland Branch route, it will parallel it on the Turnpike and terminate at Ruggles. So that would give us some idea of potential ridership. And if we decided that light rail was the way to do that, then maybe your idea would be the way to carry that out.

Luke Cheng (Massachusetts Institute of Technology): Can you comment on how you plan to use the Grand Junction at MIT and how would that affect Massachusetts Avenue?

Graham: There are two current uses of the Grand Junction. One is the Conrail freight and the other is the connection of commuter rail from the north side to the south side. This connection is needed to access the Boston Engine Terminal for equipment repair and maintenance. Because of these uses there may not be enough right-of-way available to place tracks for circumferential service at grade and they may have to be either elevated or in subway. There is also another complication because there is a desire to locate the Red Line turn-back tracks under the Grand Junction.

Parsons detailed the proposed evaluation criteria and the UMTA cost effectiveness analysis. He then provided an update of the schedule for the project. (See attached material.)

Calcaterra concluded the meeting by asking that any written comments on the project be submitted in the next few weeks.

ATTENDANCE SHEET

CIRCUMFERENTIAL TRANSIT FEASIBILITY STUDY
PROJECT COORDINATING COMMITTEE MEETING

October 27,1987
6:30 - 9:00 PM
Conference Rooms #1 and #2, Second Floor
Transportation Building

Name	Affiliation	Address	Phone #
Marianne Abrams	BRA	655 Boylston St. 02116	266-1991
Evelyn Addante	Massport	Logan Airport, E. Boston	561-1644
Charles Bahne	APT	224 Concord Ave. Cambridge 02138	354-0539
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Susan Bregman	Boston Transportation Dept.		725-4606
Pat Brennan	Stone & Webster	245 Summer Street	589-1752
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Richard Burtt	Wentworth Institute	550 Huntington Ave.	442-9010
Peter C. Calcaterra	MBTA	10 Park Plaza	722-3366
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Stephen Greene	WSANA	652 Mass. Ave.	353-0825
Mary Goode	LTC	Rm. 443 State House	722-2460
Jack Harris	Brookline Transportation Dept.	333 Washington Street	730-2139
Patrick Hickox	BSA	58 Winter Street Boston, MA 02108	542-1080
Donald Hill	Tufts-New England Medical Center. c/o Freidman	3 Fairfield St. #3, Boston 02116	266-7291
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Jane Howard	H/S-H	312 Savin Hill Ave.	288-4995
Dan Jones	Stone & Webster	245 Summer Street	589-6567
Denise Karuth	Gov.'s Commission on Accessible Trans.	20 Washington St. #108 Brighton 02146	232-2186
Henry Koff	BRA	City Hall	722-4300
Kenneth Larsen	MBTA	10 Park Plaza	722-3430
Sam Lawton	TAMS	38 Chauncy St.	482-4835

Name	Affiliation	Address	Phone #
Thomas Lenthall		37 Blanchard R. Cambridge, MA 02138	864-8945
Robert Luongo	Community Development Office	City Hall Chelsea	
Kevin Mahoney	Northeastern University	219 Cushing Hall	437-2267
Judith McConnell	Community Development Office	City Hall Chelsea	889-0700
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Elizabeth Peart	TAMS	38 Chauncy St.	482-4835
Karl Quackenbush	CTPS	10 Park Plaza	973-7114
Diane M. Ricard	CTPS	10 Park Plaza	973-7270
Ted Siegel	Citizen	466 Park Drive	247-3224
Carole Sonduck	JRTC/LWVM	38 Bartlett Ave. Arlington 02174	646-2292
Robert Stephenson	Boston Fenway Program	236 Huntington Ave. Boston 02115	262-0060
Dan Sullivan	City of Everett	Community Development	389-210 ext. 15
John L. Sullivan	HCHP	15 Annabell St. Dorchester	
Rob Tassinari	MASCO	221 Longwood	732-2778
John R. Terrell	Pru Property Co.	Pru Tower 18th floor 02199	236-3696

Name	Affiliation	Address	Tel. #
Ken Terrell	RTD Commuter Railroad	150 Western Ave. Cambridge, MA 02139	497-7889
Holly Welch	Sverdrup	38 Chauncy St.	482-7880
Pam Wolfe	Sverdrup	38 Chauncy St.	482-7880
John Woodward	Town of Brookline	Town Hall Brookline	730-2130
Ernie Zupancic	RFW Assoc.	100 E. Concord St. 02118	262-9222

LONG RANGE CORRIDOR ALTERNATIVES

CIRCUMFERENTIAL TRANSIT FEASIBILITY STUDY

LONG RANGE ALTERNATIVES

Eight refined alternatives have now been identified for the cost effectiveness analysis. The purpose of these alternatives is to test a range of options for year 2010 transit service in the circumferential corridor. The eight alternatives described below are depicted in the attached graphics.

ALTERNATIVE 1: BASELINE

This alternative represents the baseline or "do nothing" 2010 design year transit service in the circumferential corridor. The purpose of analyzing this option is to provide a basis of comparison for the other "action" alternatives. While this alternative does not include any improvements in the circumferential corridor, it does include a number of radial transit improvements such as restoration of the Old Colony commuter rail lines and extension of the Green Line from Lechmere to West Medford.

ALTERNATIVE 2: TSM

The TSM or Transportation Systems Management alternative consists of low cost capital improvements, the addition of new bus service and the modification of existing bus services to provide circumferential transit connections in the primary study corridor. Improvements will be concentrated in the corridor from the JFK/U-Mass stop on the Red Line to Lechmere on the Green Line and Community College on the Orange Line. Improvements also include a series of express bus routes along the Massachusetts Turnpike from the west serving Longwood, Simplex/University Park/MIT, Kendall/Tech. Square, Lechmere/East Cambridge and the Charlestown Navy Yard. (See separate package in agenda)

ALTERNATIVE 3C: CORE LRT

Alternative 3C consists of the development of a Light Rail Transit (LRT) line from Ruggles Station on the Orange Line in the southwest corridor to the Community College Station on the Orange Line north corridor. A new commuter rail stop is assumed at Community College.

ALTERNATIVE 3D: JFK/U. MASS CORE LRT

Alternative 3D consists of the core alignment of alternative 3C plus an extension to the JFK/U-Mass Station on the Red Line. A new commuter rail stop is assumed at JFK/U-Mass.

ALTERNATIVE 3E: LRT - JFK/U.MASS TO AIRPORT via COMMUNITY COLLEGE

Alternative 3E consists of the core alignment and JFK/U-Mass extension, plus an extension to Logan Airport from Community College on the Orange Line via Everett and Chelsea.

ALTERNATIVE 3F: LRT - JFK/U. MASS TO AIRPORT via GRAND JUNCTION

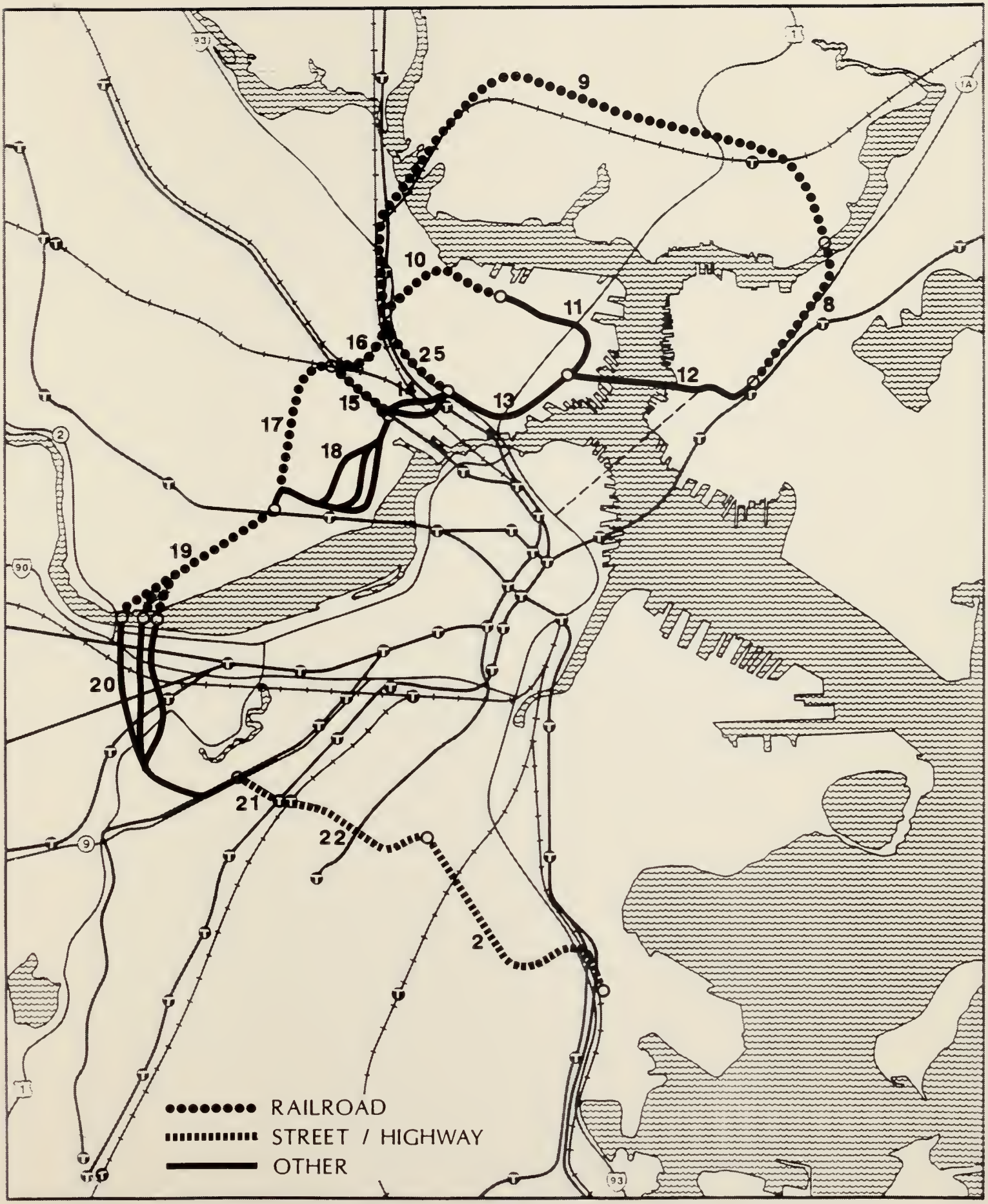
Alternative 3F consists of the core alignment and JFK/U-Mass extension, with departure from the core, beginning in Cambridge at the crossing of the Red Line at Main Street. A new station would be developed between Albany and Vassar Streets on the Red Line to interface with the circumferential line; the line would continue along the Grand Junction alignment to Sullivan on the Orange Line; then proceed to the Airport via Everett and Chelsea.

ALTERNATIVE 5D: MINI METRO CORE ALIGNMENT

This option includes a range of fully grade separated systems with capacities less than that associated with heavy rail systems such as the Red Line. Included here are driver controlled systems, like Boston's Blue Line, and automated systems such as the Vancouver Skytrain, the London Docklands' system or the new downtown people mover in Miami. The core alignment would extend from Ruggles Station on the Orange Line in southwest corridor to Community College Station on the Orange Line north corridor. A new commuter rail stop is assumed at Community College.

ALTERNATIVE 6: GUIDED BUS

The guided bus alternative would connect the entire corridor running from JFK/U-Mass Station on the Red Line to Logan Airport. Six separate routes are contemplated. One route would traverse the entire corridor from the Red Line to the Airport. Three lines would travel along the Massachusetts Turnpike from Route 128 to three alternative terminal points: Ruggles on the new Orange Line, Lechmere on the Green Line and the Charlestown Navy Yard. A fifth route would connect Ruggles Station on the Orange Line to Harvard Square via the circumferential corridor and surface streets in Allston and Cambridge. A sixth route would operate along Blue Hill Avenue from Route 128 to the circumferential corridor, then continue along the entire length of the corridor in Boston and Cambridge, terminating at the Community College Station on the Orange Line.



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CIRCUMFERENTIAL TRANSIT FEASIBILITY STUDY

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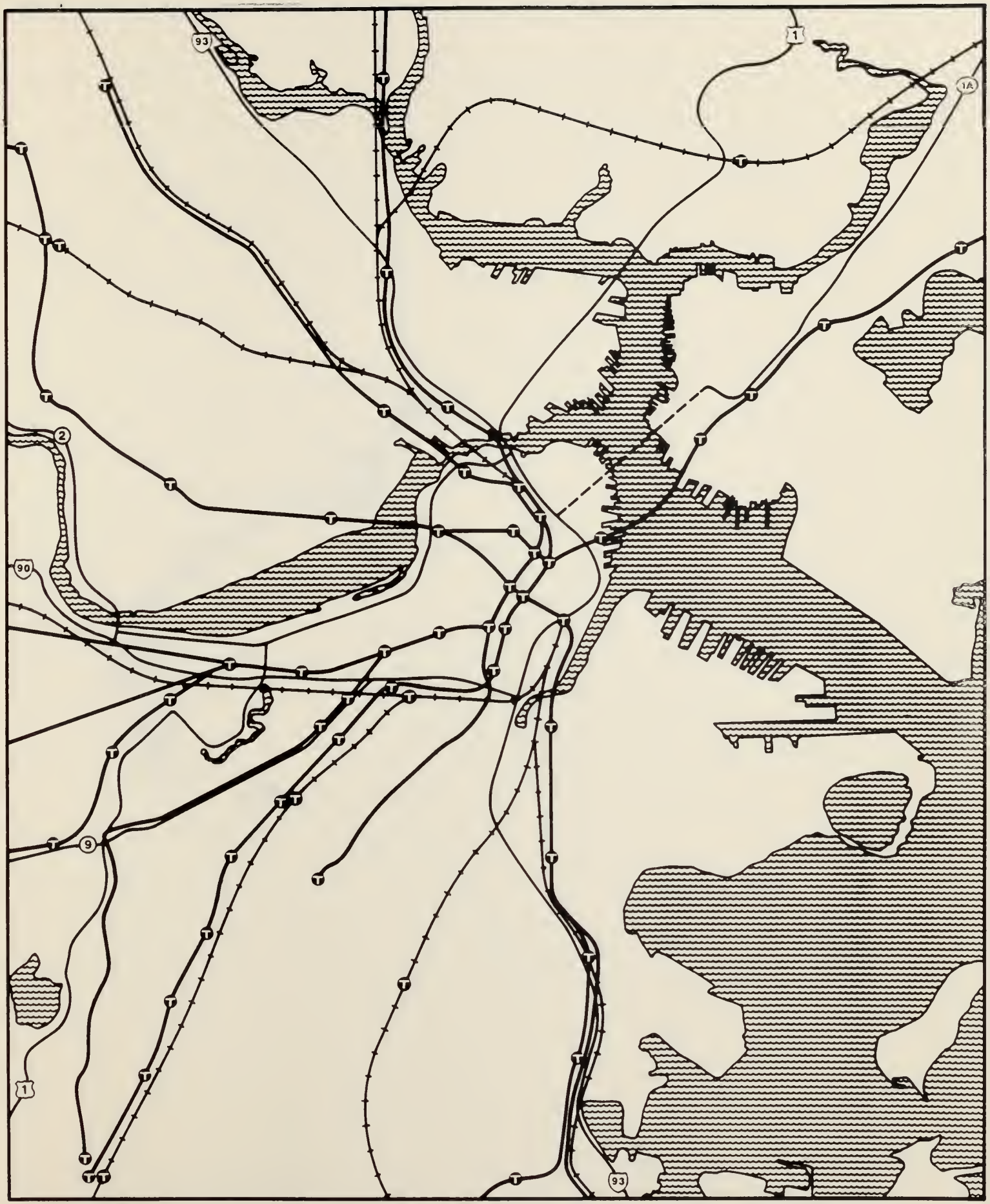
CANDIDATE RIGHTS-OF-WAY



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CIRCUMFERENTIAL TRANSIT FEASIBILITY STUDY

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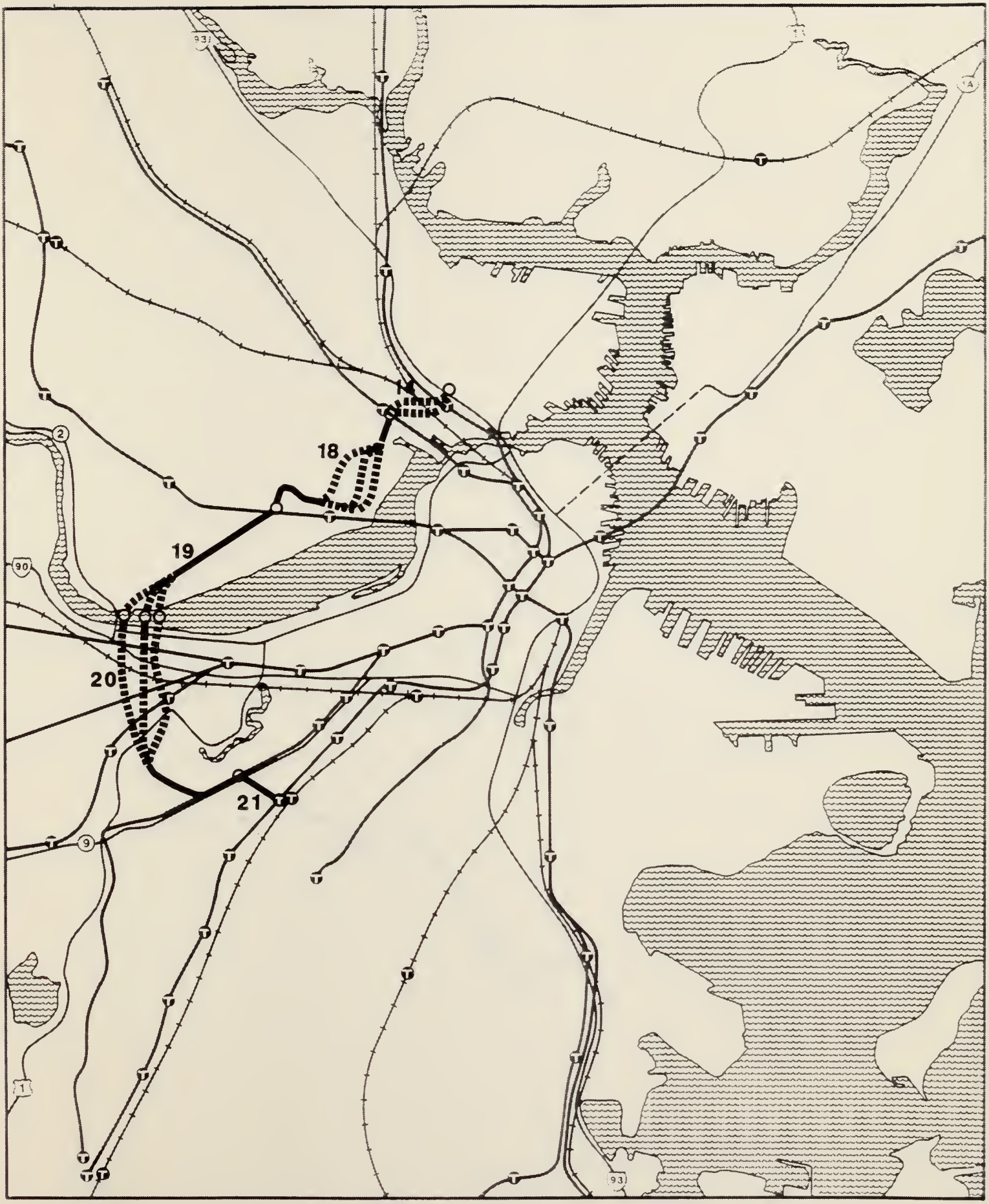
ALTERNATIVE 1 : BASELINE



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CIRCUMFERENTIAL TRANSIT FEASIBILITY STUDY

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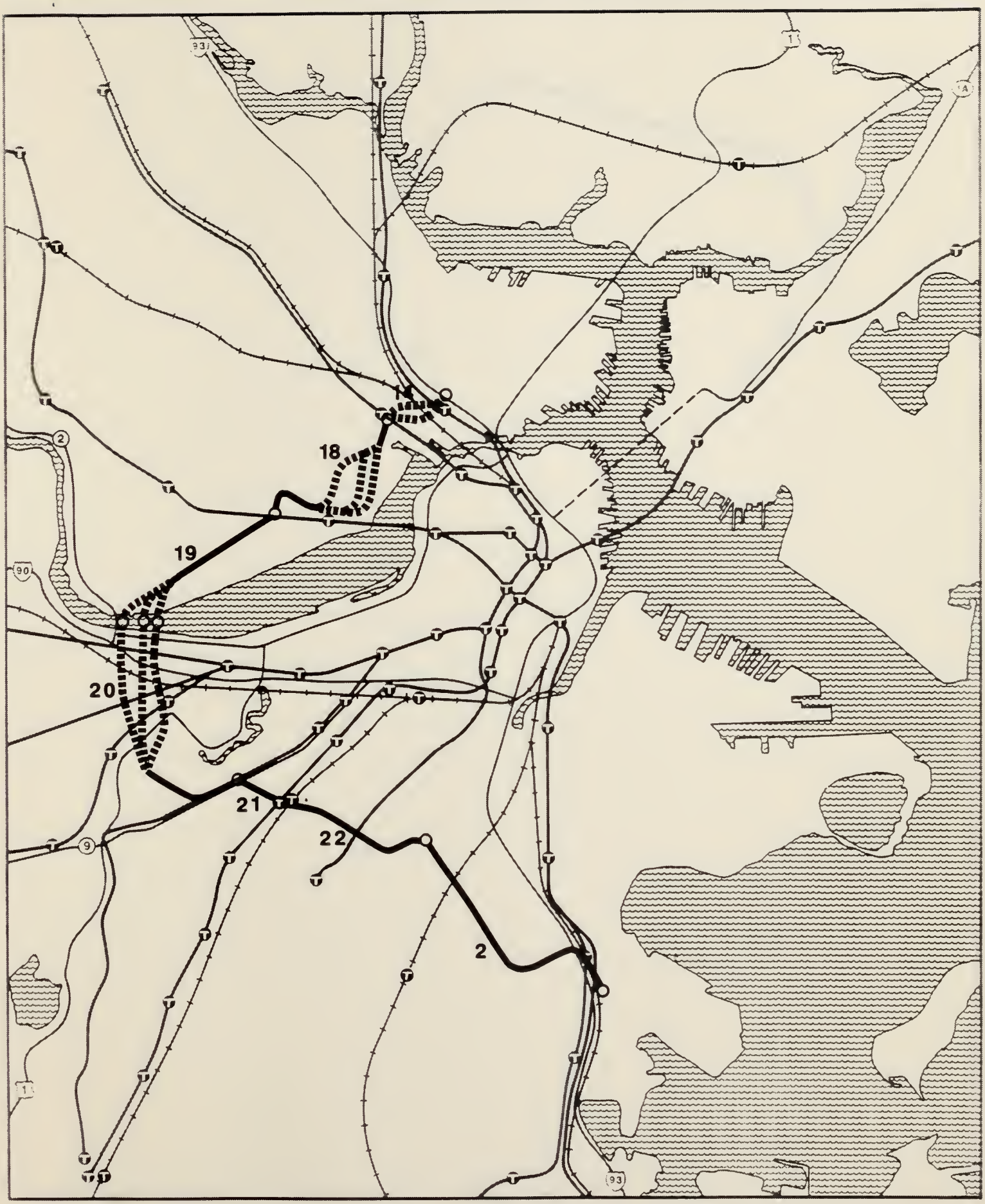
ALTERNATIVE 3C : CORE LRT



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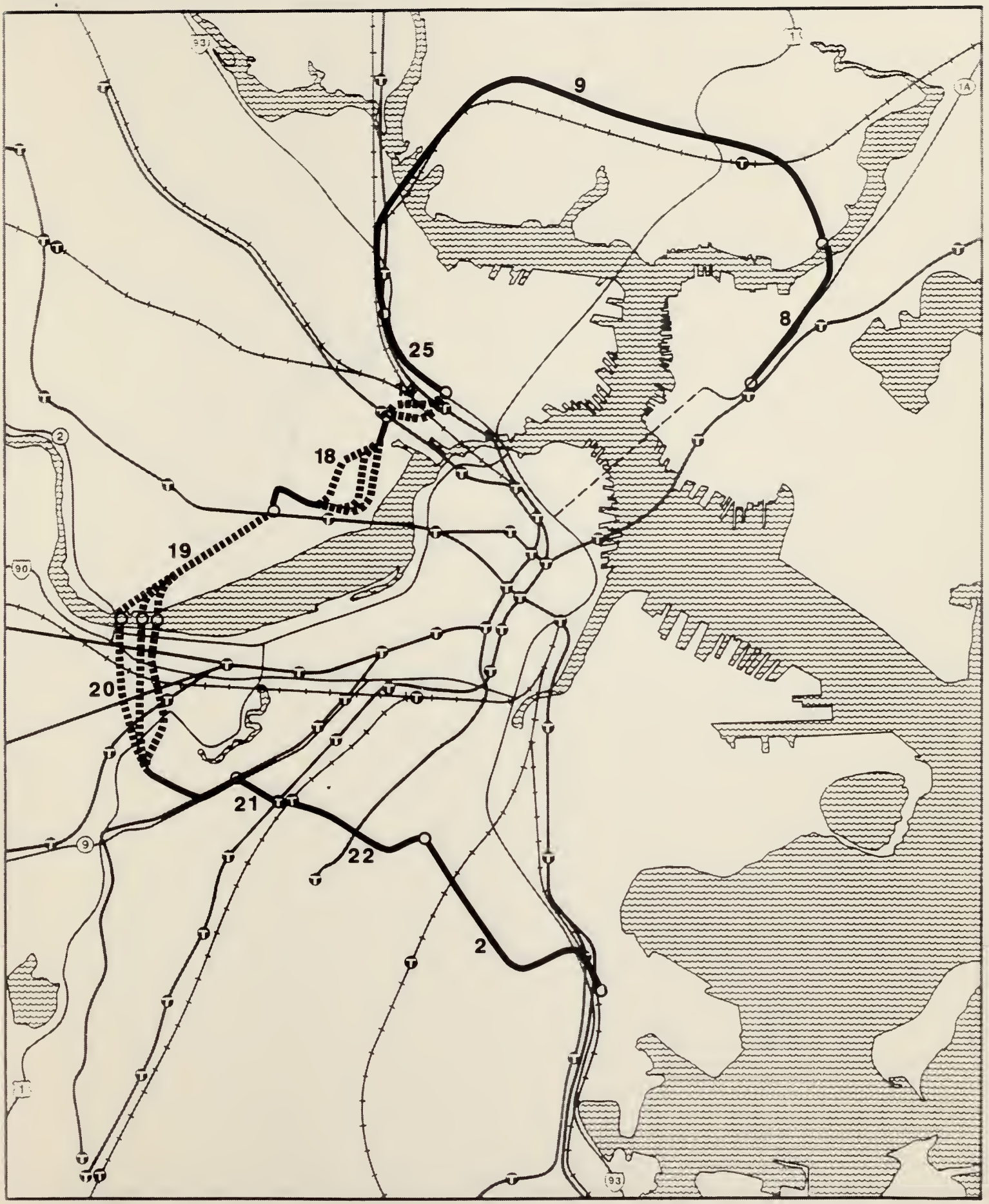
ALTERNATIVE 3D : JFK / U.MASS CORE LRT



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CIRCUMFERENTIAL TRANSIT FEASIBILITY STUDY

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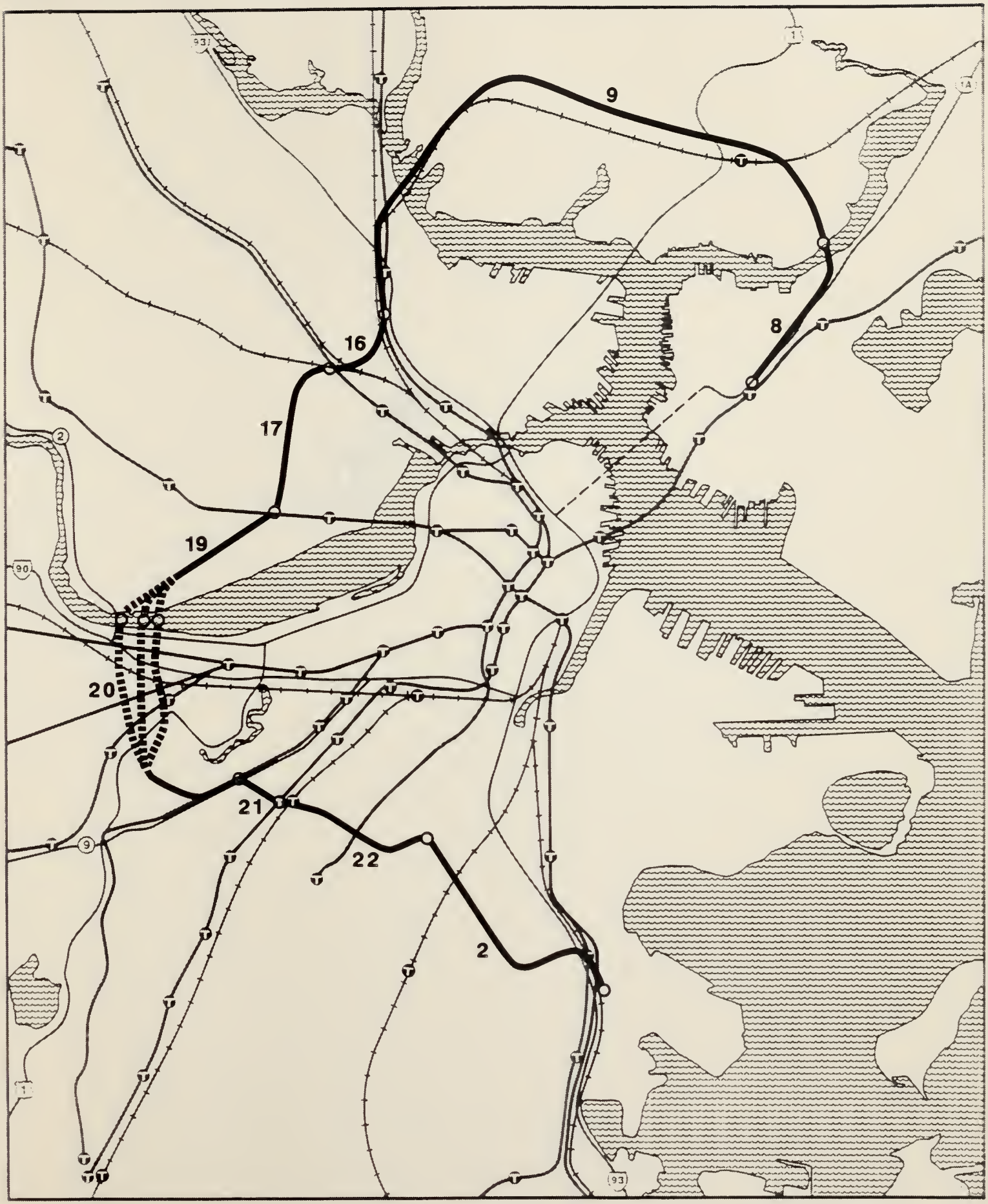
ALTERNATIVE 3E : LRT
JFK / U.MASS TO AIRPORT VIA COMMUNITY COLLEGE



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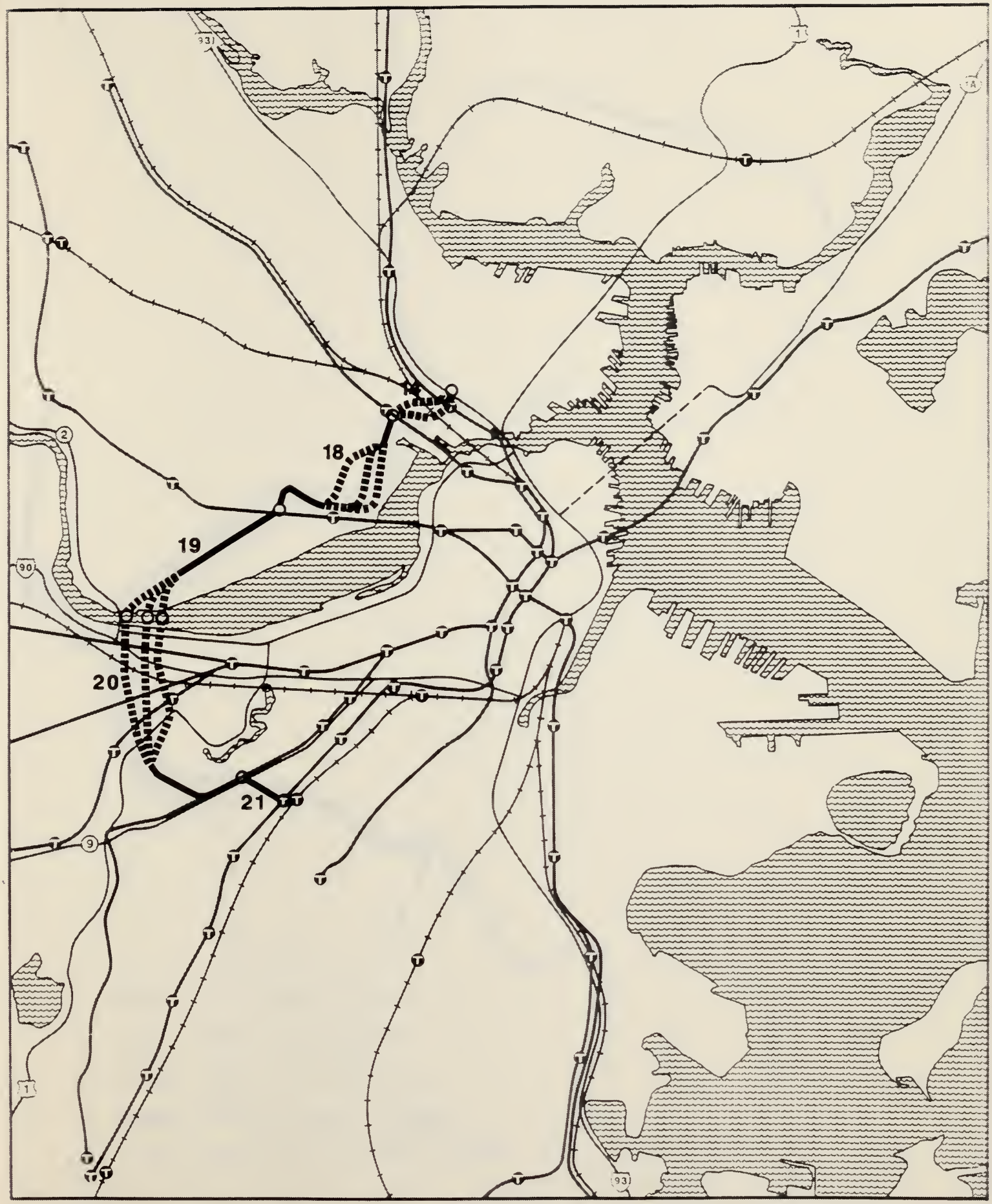
ALTERNATIVE 3F : LRT
JFK / U.MASS TO AIRPORT VIA GRAND JUNCTION



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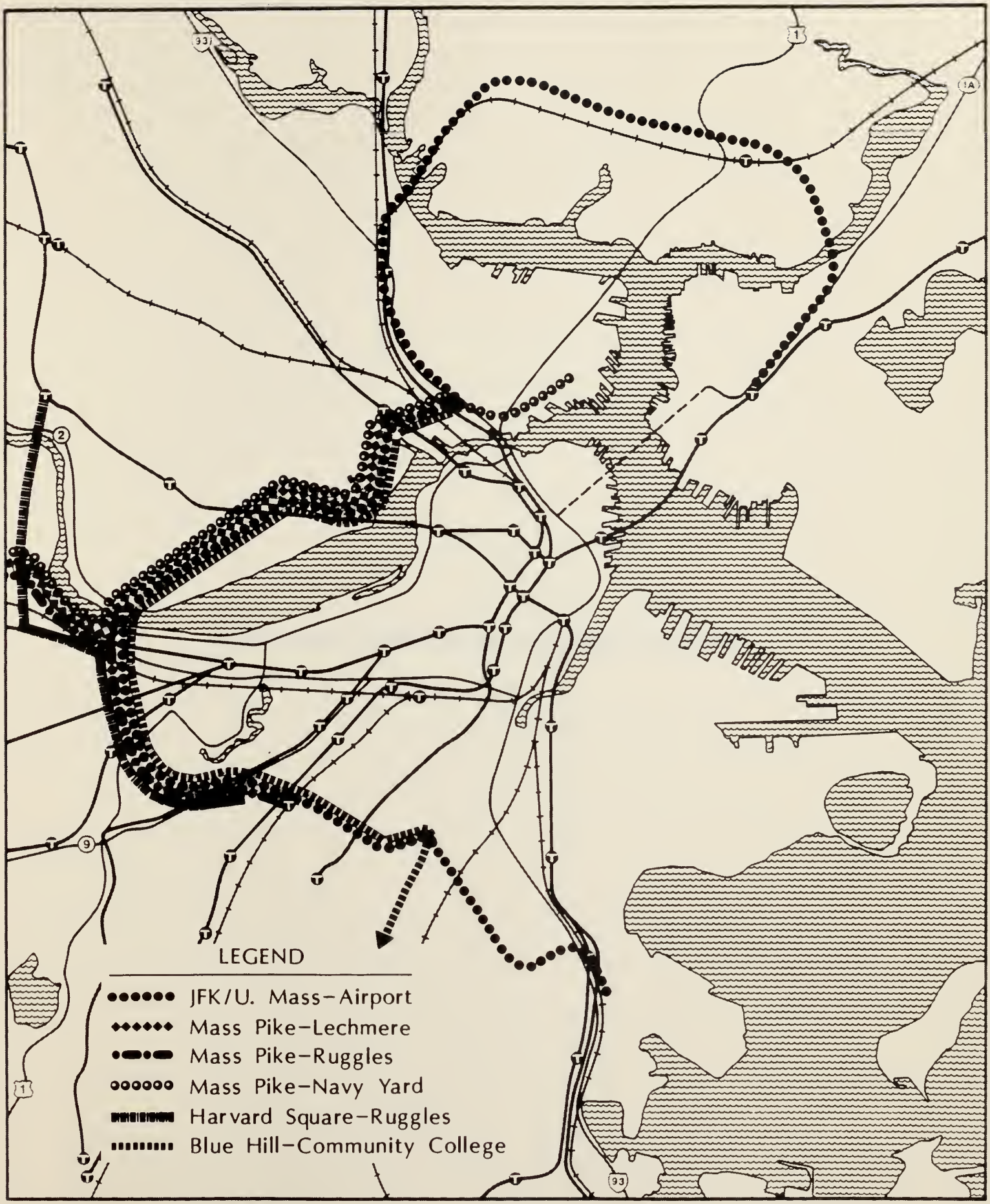
Consultants
DMC Engineering
John Howard
LEM & Co
Seaboard Corporation

ALTERNATIVE 5D : MINI METRO CORE ALIGNMENT



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CIRCUMFERENTIAL TRANSIT FEASIBILITY STUDY

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ALTERNATIVE 6 : GUIDED BUS

PRELIMINARY FINDINGS OF PATRONAGE ANALYSIS

CIRCUMFERENTIAL TRANSIT FEASIBILITY STUDY
PRELIMINARY SUMMARY OF PATRONAGE FORECASTS

- Comparison of 1987 vs. 2010 Alternative 1 Baseline Patronage

  Systemwide
  - 35% increase in total transit person trips (linked trips).
  - 33% increase in total passengers miles.
  - 41% increase in rail rapid transit passenger boardings.

  Central Subway
  - Green Line Park Station daily boardings increase 21% from 43,000 in 1987 to 51,500 in 2010.
  - Red Line Park Station daily boardings increase 21% from 33,000 in 1987 to 40,000 in 2010.
  - Peak hour max. load volumes increase 20% from 6,700 in 1987 to 8,000 in 2010 between Arlington and Boylston Stations.

- Year 2010 Alternative 2: TSM Patronage
  - 5,000 new daily transit person trips (diverted from auto) as compared to Alt. 1.
  - Park Station daily boardings decrease by 2,500 (49,000 on the Green Line and 37,500 on the Red Line) as compared to Alt. 1.

- Year 2010 Alternatives 3-6: Circumferential Patronage
  - 20,000 to 32,000 new daily transit person trips (diverted from auto) as compared to Alt. 1.
  - Daily systemwide transit passenger hours decrease from 2,000 to 9,000 hours as compared to Alt. 1.
  - Daily boardings on Circumferential line in Alts. 3-6 range from 100,000 to 130,000.
  - Park Station daily boardings decrease by 13,000 to 14,000 (37,000 on the Green Line and 27,000 on the Red Line) as compared to Alt. 1.

o Year 2010 Circumferential Line Daily Station Boardings

Station	Alternative(s)	Boardings
1. JFK/UMASS	3A,3B,4,5A,5B	6,520 - 7,140
2. Columbia	3A,3B,4,5A,5B	2,690 - 3,040
3. Magazine/Mass.	3A,3B,4,5A,5B	1,460 - 1,550
4. Melnea Cass/Mass.	3A,3B,4,5A,5B	3,310 - 4,090
5. Washington	3A,3B,4,5A,5B	2,890 - 3,340
6. Ruggles	3A,3B,4,5A,5B,6	14,930 - 18,490
7. Huntington/Longwood	3A,3B,4,5A,5B,6	7,160 - 8,490
8. Brookline/Longwood	3A,3B,4,5A,5B,6	10,540 - 10,760
9. Beacon	3A,3B,4,5A,5B,6	6,780 - 9,200
10. Commonwealth	3A,3B,4,5A,5B,6	12,740 - 14,720
11. Putnam/Vassar	3A,3B,4,5A,5B,6	1,630 - 2,110
12. Mass./Vassar	3A,4,5C,6	7,700 - 7,850
13. Kendall	3A,4,5C,6	10,300 - 12,270
14. E. Cambridge	3A,4,5C	490 - 520
15. Lechmere	3A,4,5C	5,590 - 6,030
16. Main St./Red Line	3B,4,5A,5B	21,050 - 22,930
17. Cambridge St.	3B,4,5A,5B	2,160 - 2,360
18. Washington St.	3B,4,5A,5B	5,070 - 5,540
19. Sullivan	3B,4,5A,5B	7,500 - 9,140
20. Charlestown	3B,5A	1,160 - 1,360
21. City Square	5C	2,650
22. Navy Yard	5B,5C	3,860 - 4,440
23. Revere Pkwy.	5A	5,300
24. Mystic Mall	5A	1,460
25. Broadway	5A	3,640
26. Chelsea St.	5A	1,510
27. Airport	5A,5B	2,680 - 3,960

TSM ALTERNATIVE

ALTERNATIVE 2: TSM

DESCRIPTION

The following describes in detail the recommended components of Alternative #2, the TSM option. This alternative will be the baseline for the cost effectiveness analysis of all the Long Range Alternatives.

1. Additional Bus Routes

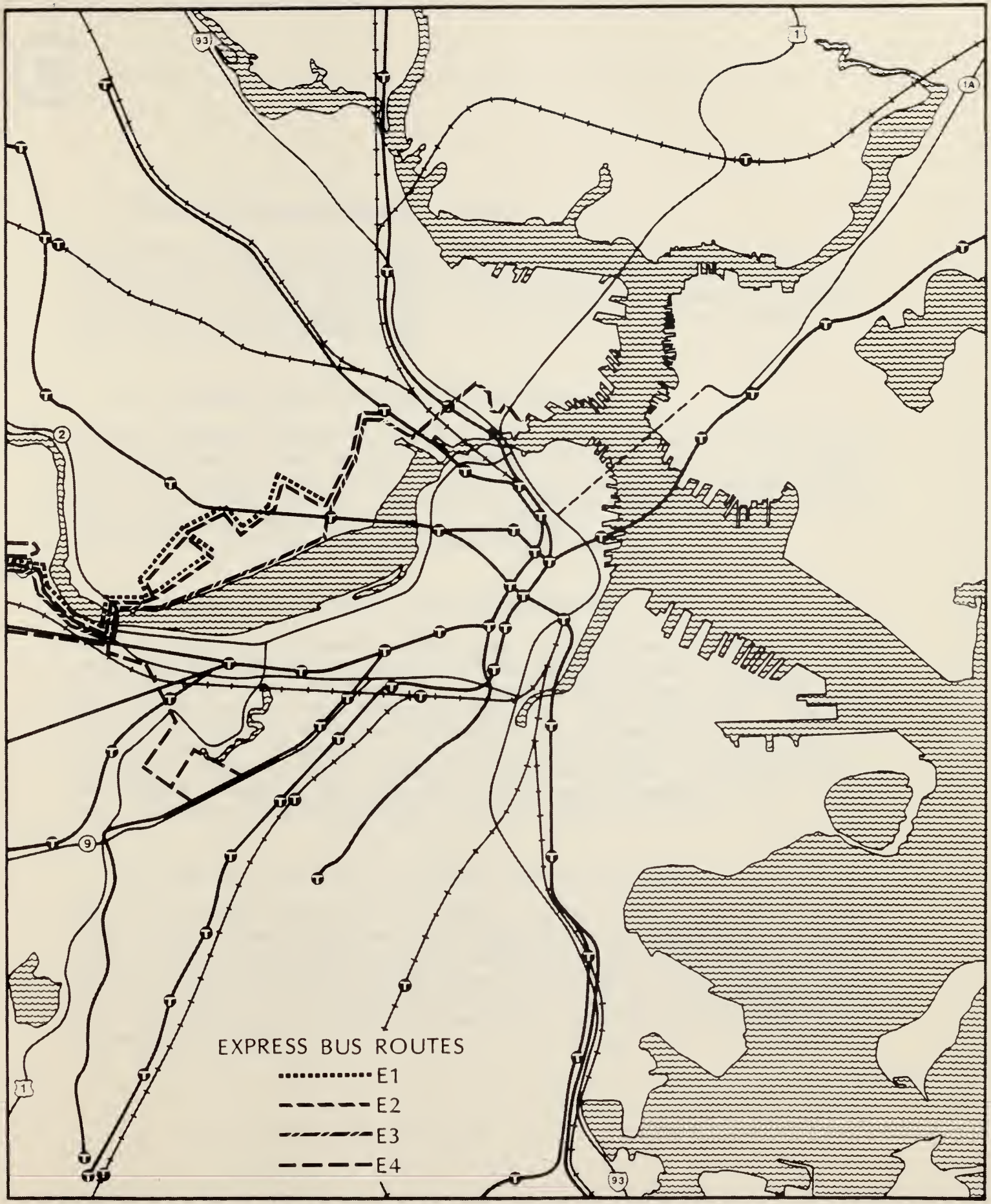
The additional bus routes include all the short term bus route recommendations and four express routes, E1 - E4, originating from the west, which would exit the Massachusetts Turnpike at the Allston Interchange.

These four routes are described below and shown in the attached map.

Three routes (E1, E2, E3) would utilize a new turnpike off ramp which would provide a direct connection to the Grand Junction Railway Bridge, beneath the BU Bridge, allowing easy access into Cambridge. Development of this ramp is currently under study by EOTC and the Turnpike Authority for use by trucks. It is recommended that this connection from the Allston Interchange over the Railroad Bridges to Memorial Drive be considered for express bus use if a decision is made to proceed with development. In addition, roadway modifications in the area of Cambridge bounded by Mass Ave, Vassar Street, Sidney Street and the BU Bridge are anticipated as a result of the Simplex development and other development plans.

These three express routes would originate from existing and expanded park-and-ride facilities to the west, beginning in Framingham. Route E1 would serve the MIT/Simplex area and terminate at Kendall Square. Route E2 would serve MIT/Simplex, Kendall Square, East Cambridge and terminate at Lechmere. Route E3 would serve East Cambridge and terminate at the Charlestown Navy Yard. Exact routings and origin/terminal points for these routes will be refined after initial evaluation of patronage potential and traffic operations.

A fourth Turnpike route, E4, originating in Watertown, will access the Longwood Medical Area. From the turnpike, using the exit ramp to Cambridge Street, Route E4 will turn left onto Cambridge Street, left onto Harvard Street at Union Square, and left onto Brighton Avenue, which merges into Commonwealth Avenue. From Commonwealth Avenue, the route would turn right onto Mountfort Street (opposite BU Bridge), merge right onto Park Drive, turn right on Brookline Avenue, left on Longwood Avenue, and left onto Avenue Louis Pasteur.



MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

CIRCUMFERENTIAL TRANSIT FEASIBILITY STUDY

TAMS Consultants Inc
Cambridge
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Jane Howard
LEM & Co
Everhup Corporation

ALTERNATIVE 2 : TSM EXPRESS BUS ROUTES

2. Physical/Operating Improvement Segments

Field observations were made along the main Circumferential corridor to evaluate the potential for improving transit operating conditions and increase bus speeds via traffic improvements. The following is a segment by segment list of possible improvements for the corridor by 2010. These segments are also shown on the accompanying map.

A. JFK UMass Station - Edward Everett Square

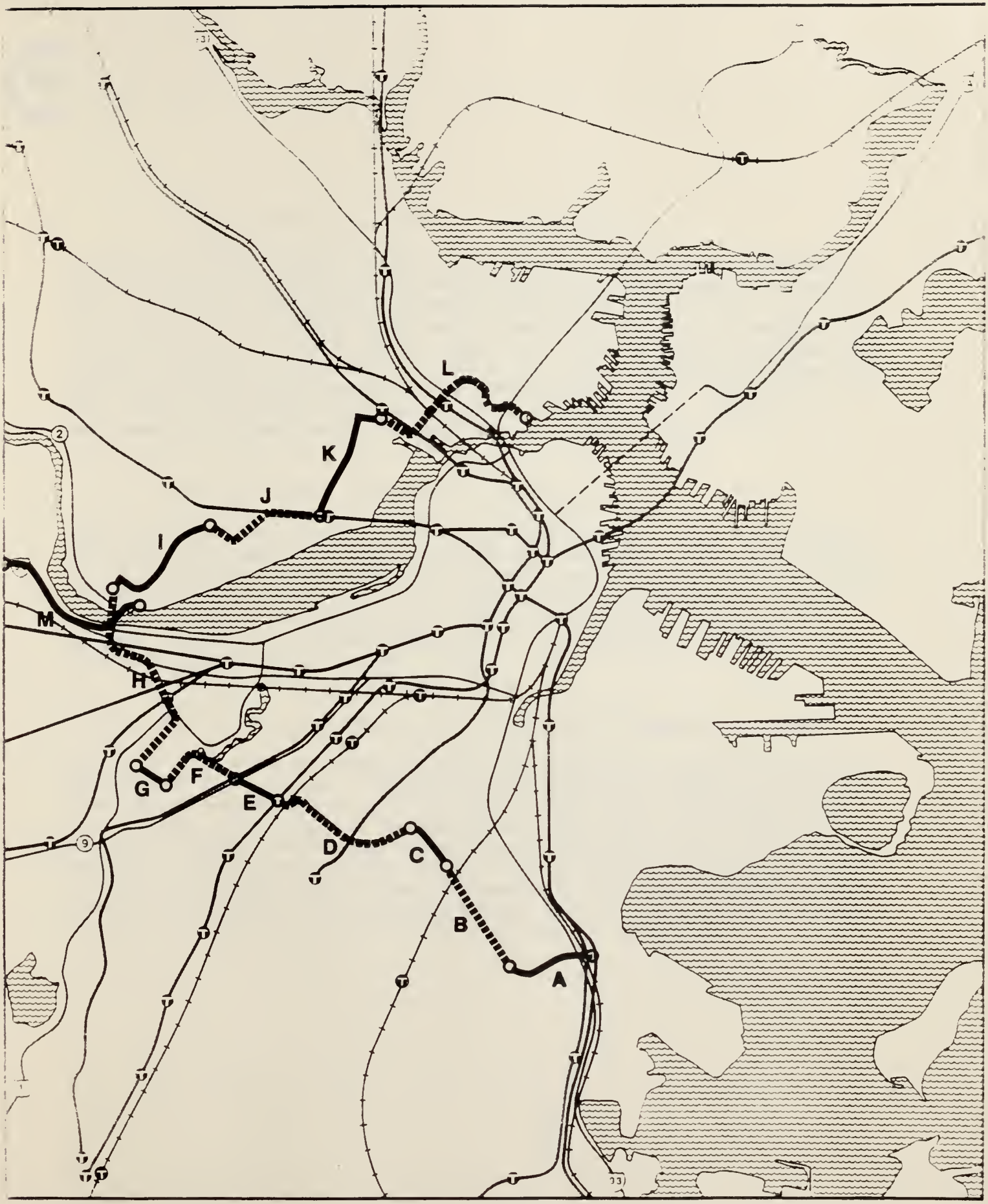
From the JFK/UMass Station to east of Edward Everett Square, Columbia Road has two travel lanes in each direction. Immediately to the east of Edward Everett Square on Columbia Road, there is one parking lane which could be restriped into a travel lane. However, the parking conflicts seem to be minor, and this improvement would have a small impact on movements adjacent to this intersection. No impact on speed is anticipated.

B. Edward Everett Square - Mass Ave @ Glynn Way

North of Edward Everett Square on Mass Ave, double parked vehicles and turning truck traffic occasionally congest the normal traffic flow. The existing parking could be taken for added travel capacity and smoother bus stop operations on this one mile segment of Mass Ave. This will require restriping of the roadway and an enforcement procedure. Significant land use changes and traffic circulation changes are likely to occur in this area as a result of development plans now being formulated by the Boston EDIC. The MBTA should review these changes as they develop to assure smooth transit operations in the area. Potential speed improvement would be approximately 10%.

C. Mass Ave @ Glynn Way - Mass Ave @ Melnea Cass Blvd.

Due to new roadway designs for the Central Artery Depression and Third Harbor Tunnel, the Southeast Expressway ramp configuration at Melnea Cass may change significantly. As a result, the local roadway network in this area may also change. The MBTA should review DPW plans for changes when available to assure smooth bus operations. On Glynn Way there is a minor weaving problem but the street is very wide. No changes recommended at this time. No travel speed improvents are assumed.



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ALTERNATIVE 2 : TSM
PHYSICAL/OPERATING IMPROVEMENT SEGMENTS

D. Mass Ave @ Melnea Cass Blvd. - Ruggles Station

Melnea Cass Blvd, two lanes in each direction with a median strip separation, appears to operate adequately. No major delays are encountered. Exclusive left turn lanes are provided at Tremont Street and Harrison Street. The other major signalized intersections at Shawmut Avenue, Albany Street, Hampden Street and Mass Ave do not have exclusive turn lanes. Since ROW exists, Melnea Cass should be widened to provide turn lanes at all these intersections. New signal phasing will be needed. Bus pull outs should also be constructed within the ROW. Melnea Cass provides excellent access Ruggles Station. With improvements the speed on this segment should increase by 10%.

E. Ruggles Station - Huntington Ave @ Ruggles St.

Ruggles Street to Huntington Avenue is one lane each direction and is narrow for the heavy traffic flow experienced during peak hours. ROW exists through the NU parking lot and it should be utilized to widen Ruggles Street to 2 lanes in each direction with exclusive turn lanes at Huntington Avenue. Access to any new development on the existing parking lots should be configured to minimize impacts on smooth bus operation. A 15% increase in operating speed could be attained on this segment.

F. Huntington Ave @ Ruggles St. - Longwood Ave @ Avenue Louis Pasteur

Previously, Bus Route 47 turned left onto Huntington from Ruggles Street and turned right onto Longwood. The current route continues straight from Ruggles Street onto Louis Prang and turns left onto Avenue Louis Pasteur, and right onto Longwood. This improved routing avoids a left turn onto Huntington Avenue and causes fewer backups behind buses as passengers board and alight. This new route appears to be better than turning left onto Huntington and will be assumed for analysis of the TSM alternative. It does not provide direct access to the eastern end of Longwood Avenue, which is within walking distance of Longwood at Louis Pasteur. No change in speed is anticipated.

G. Longwood @ Avenue Louis Pasteur - Longwood Ave @ Brookline Ave

Longwood Avenue has one travel lane in each direction, with a parking lane on the northern side. Investigation of other local streets in the Longwood Medical Area revealed that Longwood Avenue provides the most direct access to the area.

Parking on Longwood Avenue should be restricted between Huntington and Brookline Avenues to allow faster traffic flow in the area and encourage use of public transit and MASCO transportation services. Restriping of the roadway and strict enforcement of no stopping/standing zones is needed in this area. Auto passenger loading/unloading zones could be provided to facilitate drop offs and ridesharing.

Longwood Avenue, at the intersection of Blackfan Street, should be realigned to provide smoother channelization of through traffic.

Given the proposed improvements, a 10% increase in speed could be obtained.

H. Longwood Ave @ Brookline Ave - BU Bridge (Cambridge side)

Brookline Avenue between Longwood and Park Drive has 2 travel lanes and 1 parking lane in each direction.

Northbound left turns form Brookline Avenue onto Longwood Avenue should have an exclusive lane, in addition to the two existing through travel lanes. The current bus stop for Routes 60 and 65 located at this intersection should be moved north on Brookline Avenue to decrease intersection delays associated with the bus passengers loading and unloading. Some parking on Brookline Avenue should be eliminated to accommodate restriping of lanes for a left turn lane and relocation of the bus stop. New signalization will be required at this intersection. Adequate ROW does not exist for widening.

From Brookline Avenue, the corridor makes a left turn onto Park Drive with a continuation onto Mountfort Street. Park Drive has two travel lanes and one parking lane in each direction. This is the current routing for Bus Route 47. On Mountfort Street a sharp northbound left curve, with existing parking, slows traffic. Parking on this segment of Mountfort St. should be eliminated.

During the peak hours, the large intersection at Commonwealth Avenue and the BU Bridge can become quite congested but no improvements appear feasible, short of major redesign and construction. No improvements or changes in speed are anticipated.

I. BU Bridge (Cambridge side) - Mass Ave @ Landsdowne St.

Roadway modifications are anticipated by the City of Cambridge in the area of Cambridge bounded by Massachusetts Avenue, Vassar Street, Sidney Street and the BU Bridge as a result of the Simplex development and other development plans.

After crossing the BU Bridge, the corridor would turn right onto realigned Henry Street, and merge onto Waverly Street at Putnam Street. This route would use realigned Waverly Street and merge directly into Landsdowne Street and continue on Landsdowne Street to Mass Ave.

Note: The Turnpike Express bus routes would access Cambridge by utilizing a new exit ramp at the Allston Interchange (see M), follow a direct connection to the Grand Junction Railway Bridge (beneath the BU Highway Bridge) and merge left onto Memorial Drive. From Memorial Drive, Routes E1 and E2 will turn left onto Amesbury Street and cross the Grand Junction tracks at a new crossing to Waverly Street, and continue on Landsdowne to Mass Ave.

Peak hour travel speeds of 10-12 mph, including stops are anticipated.

J. Mass Ave @ Landsdowne St - Kendall Square

The corridor would turn right onto Massachusetts Avenue from Landsdowne and left onto Vassar Street. Ideally, the route would turn right onto Main Street from Vassar Street to directly access Kendall Station and then turn left onto Third Street. Currently, this left turn from Main Street to Third Street is not feasible.

Current construction plans on Main Street include a median which will restrict this proposed left turn onto Third Street. However, a cut out will exist for emergency vehicle movements. An additional cut out could be designed for bus operations or the planned emergency access could be designed for both buses and emergency vehicles. Either design would require enforcement to restrict automobile movements. Without this cut out, the corridor would not turn onto Main Street from Vassar Street but would turn right onto Broadway, and access Kendall Station via a loop back back to Main Street.

K. Kendall Square - Lechmere Station

The corridor would turn left onto Third Street from Main Street after stopping at Kendall Station, or loop back to Binney Street via Main Street.

Third Street narrows considerably between Binney Street and Cambridge Street. This is a residential area with one parking lane provided on the southwest side of the street. A bus could maneuver on this section if parking is prohibited. The right turn onto Cambridge Street may be difficult for a bus. Cambridge Street appears adequate for access into Lechmere Station. If parking is prohibited along Third Street, a 5% increase in speed would be anticipated.

L. Lechmere Station - Charlestown Navy Yard

From Lechmere, the corridor would turn onto the McGrath/O'Brien Highway, left onto the Prison Point/Austin Avenue Bridge, stop at the Community College Station on the Orange Line and turn right onto Rutherford Avenue. From Rutherford Avenue, the corridor would access the Navy Yard. No change in speed is anticipated.

Note: Currently, the Boston Transportation Department is reviewing DPW plans for the Central Artery North Area (CANA) Project which will significantly modify City Square and intersections on Rutherford Avenue. Their subsequent evaluation may alter plans for this area. The MBTA should monitor this design process to assure smooth bus operations through this area.

M. Allston Turnpike Interchange

EOTC and the Turnpike Authority are currently studying alternatives for routing hazardous cargo carrying trucks from the Allston Turnpike Interchange over the Grand Junction Railroad Bridge to Cambridge. The route would follow the Grand Junction ROW, which runs parallel to the turnpike and crosses the Charles River utilizing the Railway Bridge (under the BU Highway Bridge). The new Turnpike connection would be for trucks carrying hazardous materials. Currently, these trucks are required to exit at Allston (to prevent them from traveling through the tunnel under the Prudential Center / Copley Square) and follow circuitous and often congested routes through Cambridge to access their final destination. The proposed connection could greatly improve bus access between the Turnpike and the Simplex, MIT, Kendall Square, East Cambridge, Lechmere and Charlestown Navy Yard areas.

DRAFT

SHORT RANGE BUS IMPROVEMENTS

SHORT-TERM BUS IMPROVEMENTS

The need for improved circumferential bus connections was assessed by conducting an analysis of existing travel patterns and evaluating recommendations collected from participants in the study process.

First, activity centers identified early in the study were ranked based on population and employment densities and their projected future development. Access to these areas via existing crosstown bus routes was then evaluated. The results helped identify those activity centers having a high attraction for trips, but are not well served by circumferential routes.

The next phase involved a quantitative analysis of crosstown travel patterns in the entire study area. Based on the CTPS 1985 trip table, major circumferential trip connections were identified. These connections were compared to existing bus routes to determine where improvements might be warranted.

Input from meetings with community officials in the study area and suggestions from study participants were evaluated and combined with the list of connections from the trip table analysis.

Those connections, recommended for further analysis to produce specific route recommendations, are listed below and illustrated in the accompanying figure.

1. ROSLINDALE/WEST ROXBURY TO BOSTON COLLEGE/CHESTNUT HILL AREA

   - Current connection provided by Route 51 to Cleveland Circle, walk to Commonwealth Avenue, and transfer "B" Green Line

2. LOWER MILLS/ASHMONT/CARNEY HOSPITAL AREA TO LONGWOOD MEDICAL/NORTHEASTERN UNIVERSITY AREA

   - Current connection provided by Route 21 to Forest Hills, transfer to either Route 39 or Orange Line

3. HARVARD SQUARE AREA TO LONGWOOD MEDICAL/NORTHEASTERN UNIVERSITY AREA

   - Current connection provided by Route 1 to Auditorium, transfer to "D" Green Line, or
   - Red Line to Central Square and Route 47

4. FOREST HILLS/EGLESTON SQUARE AREA TO LONGWOOD MEDICAL/NORTHEASTERN UNIVERSITY AREA

   - Current connection provided by Route 39, or
   - Orange Line and possibly transfer to Route 47

5. FRESH POND/RADCLIFF COLLEGE AREA TO LONGWOOD MEDICAL/NORTHEASTERN UNIVERSITY AREA

   - No reasonable connection

6. GROVE HALL/EGLESTON SQUARE AREA TO LONGWOOD MEDICAL/NORTHEASTERN UNIVERSITY AREA

   - Current connection provided by Route 19 or 23 to Ruggles, either walk or transfer to Route 47

7. BRIGHTON/CLEVELAND CIRCLE AREA TO LONGWOOD MEDICAL/NORTHEASTERN UNIVERSITY AREA

   - Current connection provided by Route 65

8. BRIGHTON CENTER AREA TO MIT/CENTRAL SQUARE/KENDALL SQUARE AREA

   - Current conection provided by route 63 to Central Square, transfer to Red Line

9. CLEVELAND CIRCLE/RESERVOIR AREA TO MIT/CENTRAL SQUARE/KENDALL SQUARE AREA

   - Current connection provided by "C" Green Line to Auditorium, transfer to Route 1, or
   - "C" Green Line to Park Street, transfer to Red Line

10. DORCHESTER CENTER/CODMAN SQUARE AREA TO DUDLEY SQUARE/EGLESTON SQUARE/PARKER HILL AREA

    - Current connection provided by Route 19 or 23, possibly transfer to Route 47

11. MALDEN SQUARE TO ARLINGTON CENTER VIA MEDFORD SQUARE

    - Current connection provided by Route 101 to Medford Square to Route 94 to West Medford and transfer to Route 80

12. MALDEN SQUARE TO CAMBRIDGE VIA MEDFORD SQUARE

    - Current connection provided by Route 101 to Medford Square, transfer to Route 96

13. MALDEN SQUARE TO SOMERVILLE VIA MEDFORD SQUARE

    - Current connection provided by Route 101, possibly transfer to Route 80 at Winter Hill

14. TUFTS UNIVERSITY/DAVIS AREA TO CENTRAL SQUARE/MIT/KENDALL SQUARE AREA

    - Current connections provided by Route 94, or 96 to Davis, transfer to Red Line

15. HARVARD SQUARE AREA TO COOLIDGE CORNER/BROOKLINE VILLAGE AREA

    - Current connection provided by Route 86 to Union Square, Allston, transfer to Route 66

16. HARVARD SQUARE AREA TO KENMORE/FENWAY/BOSTON UNIVERSITY AREA

    - Current connection provided by Route 1 to Auditorium, transfer to Green Line

17. DUDLEY SQUARE/EGLESTON SQUARE/PARKER HILL TO KENMORE/FENWAY/BOSTON UNIVERSITY AREA

    - Current connection provided by Route 1 to Auditorium, transfer to Green Line

18. MIT/CENTRAL SQUARE/KENDALL AREA TO DUDLEY SQUARE/EGLESTON SQUARE/PARKER HILL AREA

    - Current connection provided by Route 1, possibly transfer to Route 39

19. GROVE HALL/EGLESTON AREA TO DUDLEY SQUARE/EGLESTON SQUARE/PARKER HILL AREA

    - Current connection provided by Route 23, possibly walk from Ruggles to Huntington Avenue and transfer to Route 39

20. CHARLESTOWN NAVY YARD TO CENTRAL SQUARE/LECHMERE AND KENDALL SQUARE AREAS

    - No reasonable connection exists

21. FOREST HILLS AREA TO DUDLEY SQUARE/EGLESTON SQUARE/PARKER HILL AREA

    - Current connection provided by Route 42 or Route 39

22. UPHAMS CORNERS AREA TO DUDLEY SQUARE/EGLESTON SQUARE/PARKER HILL AREA

    - Current connection provided by Route 8, possible transfer to Route 46

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MASSACHUSETTS BAY TRANSPORTATION AUTHORITY

CIRCUMFERENTIAL TRANSIT FEASIBILITY STUDY

TAMS Consultants, Inc.
Cosentini
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Jane Howard
LEM S Co
Sverdrup Corporation

SUGGESTED BUS ROUTE IMPROVEMENTS

SCOPE FOR ADDITIONAL WORK

YEAR 2010 RADIAL LINE IMPACT ANALYSIS

&

DETAILED TSM ANALYSIS

In December of 1986 the Authority began a long range feasibility analysis of possible improvements to circumferential transit services in the City of Boston and ten surrounding cities and towns within approximately five miles of the MBTA central subway district. The Authority identified four objectives for improved service in the circumferential corridor, as follows:

1. Relief of central subway congestion;
2. Improved access to major destinations;
3. Improved crosstown access; and
4. Increased ridership.

With the completion of the preliminary analysis of both high capital, long range alternatives and shorter time horizon, TSM improvements, the need for the following additional work has been identified:

1. One of the four objectives of the study was relief of central subway congestion. The original scope called for examining alternative short and long range improvements in the circumferential corridor as the means to accomplish this objective. The scope did not include an analysis of the impacts on the central subway of not making improvements in the circumferential corridor. Also, no analysis of alternative central subway improvements aimed at meeting forecast year 2010 ridership was included. The work to date indicates that downtown boardings on the radial rapid transit and commuter rail lines will rise significantly by the year 2010 unless a major capital improvement is made in the circumferential corridor. In addition, the conceptual engineering work completed to date indicates that development of a fixed transit facility in the circumferential corridor will require a very large capital investment. As a result, the feasibility of circumferential corridor improvements cannot be determined without the following additional work:

   - An analysis of the impacts on the radial rapid transit and commuter rail lines of forecast year 2010 ridership volumes under both the circumferential Baseline and TSM Alternatives.

   - An identification of conceptual improvements needed to the radial rapid transit and commuter rail lines to mitigate any identified capacity problems.

2. The study scope called for the development and evaluation of a circumferential corridor TSM Alternative, including bus service changes and additions and modest capital traffic, roadway, and bus facility improvements. The study has identified a series of detailed bus service

improvements, which are to be carried to a greater level of detail as follow-on work to that already completed study. The study has also identified 13 corridor segments where conceptual physical improvements can enhance existing and recommended future bus services. These alternatives, however, were developed for purposes of determining the cost effectiveness of the high capital alternatives. Planning work was not undertaken to detail and evaluate the TSM improvements at a level sufficient to determine individual segment feasiblity and move them to the point where design and implementation activities could begin. As a result, the following additional work should be undertaken:

- Based on the 13 corridor segments and conceptual improvements specific traffic, roadway and transit facility improvements will be described and evaluated at a level of detail sufficient to determine the feasibility of individual improvements.

- An implementation strategy and phasing plan will be developed for the most promising improvements, tied to the identified program of bus service improvements.

The following corridor segments have been identified for initial early analysis:

a. Longwood Area

TSM actions to be analyzed include intersection improvements, selected street segment widenings, lane use changes and enforcement strategies to expedite bus operations in the following areas:

- Ruggles Street from Ruggles Station (Orange Line) to Huntington Avenue.

- Louis Prang from Huntington Avenue to Louis Pasteur.

- Louis Pasteur from Louis Prang to Longwood Avenue.

- Longwood Avenue from Louis Pasteur to Brookline Avenue.

- Brookline Avenue from Longwood Avenue to Park Drive.

- Park Drive from Brookline Avenue to Mountfort Street.

- Mountfort Street from Park Drive to the B.U. Bridge.

b. Cambridge Area

In addition, the City of Cambridge has plans now underway for street and traffic circulation changes in the University Park/Simplex/MIT and Kendall Square areas. These changes include modified access patterns to and from the B.U. Bridge; changes to Waverly, Sidney and Landsdowne Streets and modifications in the Kendall Square area. All of these changes will impact existing bus circulation patterns as well as those proposed as part of the Circumferential Transit Short-Range Bus Improvements.

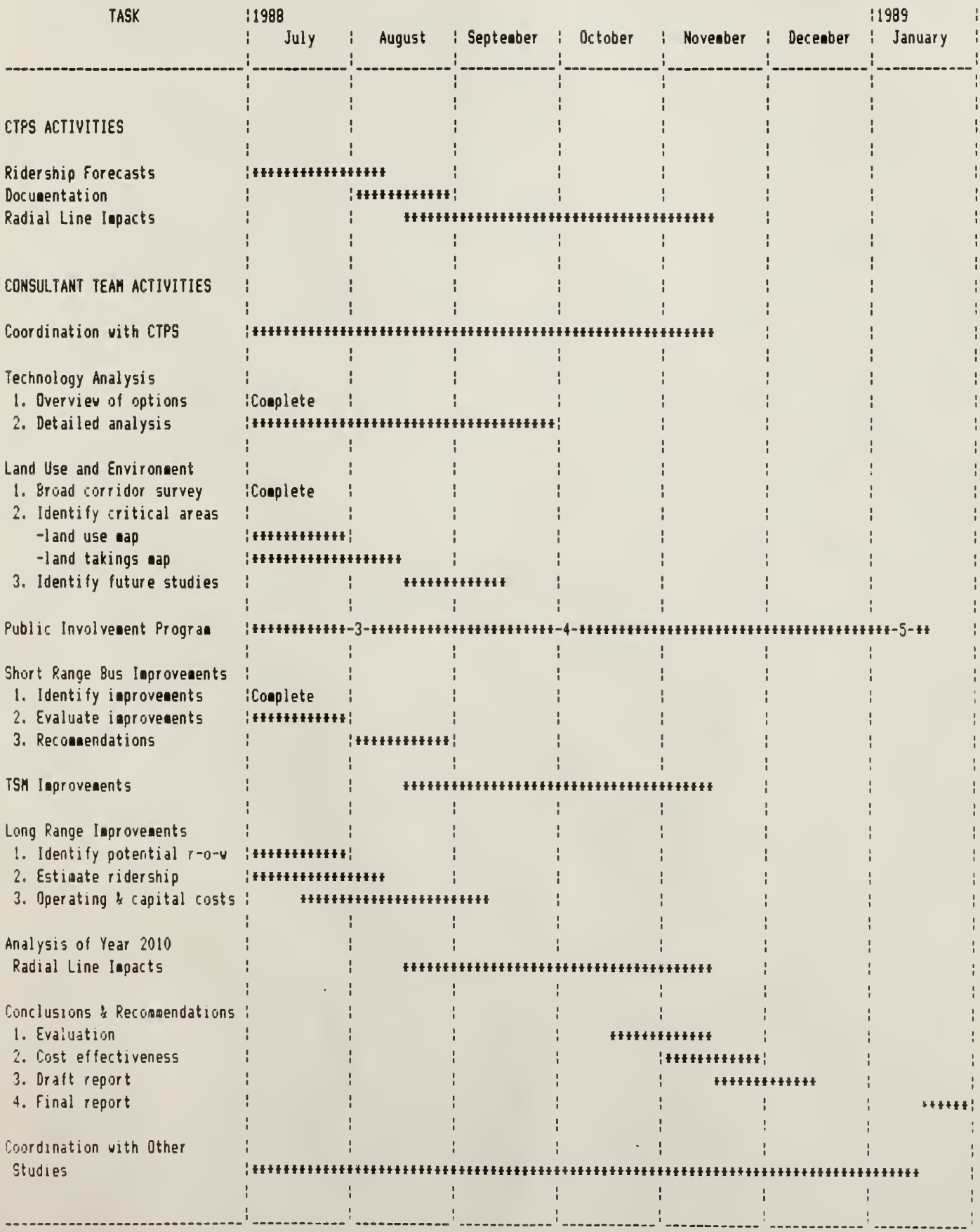
An analysis will be undertaken of the planned changes in the Simplex/MIT area and those now being implemented in the Kendall Square area. This work will identify the implications for existing and proposed MBTA bus services, make recommendations for changes, and assist the MBTA staff in discussions with the City of Cambridge.

c. Ruggles to Jackson Square--Tremont/Columbus

As a result of the opening of the new Orange line, significant bus activity now takes place on the reconstructed Tremont Street / Columbus Avenue corridor, in particular to and from the Jackson Square and Ruggles Stations. Two routes, with some 20 buses per hour currently travel along Columbus Avenue / Tremont Street between Jackson and Ruggles Station. Seven routes operate between Dudley Station and Ruggles Station, with some 50 buses per hour traveling along New Dudley Street / Tremont Street.

Operational problems are encountered during peak periods, in particular for eastbound bus movements, resulting in delays to bus services and adverse general traffic conditions. The main difficulties involve left-turn movements of buses at various intersections, and problems of weaving from bus stop locations. There are also difficulties as a result of misuse of the breakdown lane on Tremont Street / Columbus Avenue.

The purpose of the study is to identify and quantify the existing problems, and to investigate possible remedial measures. One such proposal which might improve safety and operation for both buses and traffic in the corridor would involve the creation of the bus lanes along Tremont Street and Columbus Avenue, utilizing the existing breakdown lanes. Other TSM measures and roadway improvements may provide improvement of conditions in the corridor.

SCHEDULE

SUMMARY SCHEDULE
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